Frankly Speaking

Defective Highways

ACCORDING to a recent report of a special committee appointed to study traffic accidents in one of our southern states, "less than one per cent of the accidents were attributed to 'defective highways'" in that state. The report goes on to say that "approximately 80 per cent of all accidents appeared to result from obvious driver failures."

This is an example of the too prevalent attitude that puts the onus on the operator of the vehicle—that treats him as a kind of catch-all or goat to take the blame when the causes of the accidents are vague or unknown.

In the break down of "obvious driver failures," the report points out the four most common violations committed were "on wrong side of road," "did not have right of way," "exceeding lawful speed," and "improper passing." These so-called driver failures were undoubtedly in many cases highway failures. Failure to properly centerline the highway, to physically divide it, to channelize movement, or to ensure freedom from roadside obstructions frequently causes driving on the wrong side of the road. "Did not have right of way" may be due to inadequate or confusing stop signs or signals or warning devices. "Exceeding lawful speed" may or may not be hazardous, depending on design features of the highway in relation to the speed limit. Speed zoning, removal of sight restrictions and highway lighting are some of the many engineering methods of assuring a driver maximum speed with safety. "Improper passing" accidents can be prevented as we know by properly selecting and marking "no passing" zones in a clear and unmistakable manner.

In other words, a highway is defective in the true sense of the word if it is not designed to give the driver maximum speed of movement with safety. Mere maintenance and routine improvements won't eliminate highway defects. Intelligent design of new facilities, redesign of existing ones and application of traffic engineering remedies where accidents are frequent, are sure ways of assuring safety.

Henry Evans

Acting Editor.

Modernizing Illinois Route U. S. 66

by WESLEY W. POLK
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ROUTE U. S. 66 in Illinois has long been recognized as the State's most important long-distance highway. In its 290-mile diagonal course across the State it provides direct connection between the Chicago and St. Louis metropolitan areas; serves a number of sizeable intervening communities, including the State capital; and traverses territory which is highly productive both agriculturally and industrially. It carries more traffic sustained throughout its length than any other long-range Illinois highway. It was a vital link in the strategic highway network, and is certain to become a route of the National System of Interstate Highways.

Most of the original pavement is some 25 years old. Considerable parts of it are in advanced stages of deterioration. Two-lane pavement is generally only 18 feet wide, and four-lane pavement is of the undivided type. The pavement cross section is too light for present day loads. The entire original highway is approaching obsolescence.

Prior to the war, a program of progressive modernization of U.S. 66 was initiated. Except in the metropolitan areas, the ultimate improvement planned consists generally of dual 24-foot pavements separated by a 40-foot depressed parkway, and with 10-foot shoulders. Where the highway extends through or adjacent to existing or prospective built-up areas, independent service drives will be built. Grades will be separated at all railroad crossings, except for a few unimportant branch lines which will be protected by automatic flashing lights and gates. Grade separations will also be built at a number of major highway intersections. By-pass alternates will be provided at practically all cities and villages. In the period of time that the modernization has been in progress there has been a natural raising of design standards for all classes of highways, and some of the earlier reconstruction on U.S. 66 falls somewhat short of the ultimate plan as now contemplated, particularly as to pavement and parkway width.

Further Study Required

Because of the numerous complications encountered and the tremendous right of way and construction costs involved, exhaustive study is necessary before the exact location and design for the modernized route in the Chicago and East St. Louis metropolitan areas can be determined. The severe shortage of engineering personnel during the war—which as yet has been relieved only slightly—has prevented completion of these studies. However, it may be said now that the improvement of 30 miles at each extremity of the route will be of superhighway proportions, and with access control throughout. In the Chicago area, an interesting possibility is that of utilizing a section of the century-old Illinois and Michigan Canal—no longer of use as a navigable waterway—as a right of way for part of the highway.

By-Pass Routes

Outside of the two metropolitan areas, good progress has already been made on actual construction. Approximately 50 miles of two-lane and 15 miles of divided four-lane pavement had been completed before the war. Important in this construction were by-pass routes at the cities of Joliet, Bloomington, Lincoln, Springfield, and Staunton; also, 15 railroad and 4 highway grade separations.

Dual pavement at curve on Bloomington belt line.

Route U. S. 66 was subjected to a particularly heavy concentration of the excessively - loaded commercial traffic which characterized the war years. Under this punishing burden, the process of pavement deterioration was accelerated. As it was essential that this highway be kept in service for the movement of war goods, Federal authority was granted each year to replace sections of pavement where its condition had become critical. Wartime contracts provided for construction of over 125 miles of new two-lane concrete pavement on this route.

On a few short sections the initial reconstruction project has consisted of a complete divided four-lane pavement. However, for much the greater part of the length, the ultimate modernization is being accomplished in at least two stages. In the first stage a new two-lane pavement is built to one side of and separated from the old existing pavement. Traffic is thus able to use the old pavement while the new is under construction. When the new pavement is opened to traffic the old is abandoned, except for short stretches needed for local service. The second stage will be the replacement of the old abandoned pavement by another new two-lane slab, thus completing a four-lane dual highway. In some cases service drives will be included in the second stage, while in others they will be built at some subsequent time as a third stage of development. In the latter event, rights of way for the drives are ordinarily included in the initial acquisition. In one instance a service drive was built as part of the first stage of reconstruction.

With the early completion of several projects now under construction, the first stage of modernization will be finished for two-thirds of the route. While this will be far short of the final goal, the most deficient parts of the original highway, outside of the two metropolitan areas, will have been replaced. This fact is expected to attract considerable traffic from competing routes.

Traffic Controls

In preparation for a greatly expanded traffic on U. S. 66, plans are now being made for the immediate revamping of the system of traffic control and protection for the full length of the route. A study is now underway to measure the degree of potential hazard for each major intersection and to determine what

changes in control are warranted in each individual case. The appraisal of each intersection will include an analysis of the accident record, speed surveys on the preferential highway, representative traffic counts and pattern of movement, and a survey of energy sources for operating electrical equipment.

Although this study is not yet entirely completed, a preliminary analysis indicates that of 27 intersections now protected by stop signs only, four will be unchanged, eighteen will be changed to flashing beacons, two will have vehicle-actuated traffic control signals, and in three cases sodium vapor lighting will be added; of two intersections now protected by four-way stop signs, one will be unchanged and one will be changed to flashing beacons; one intersection now protected with stop signs and sodium vapor lighting will remain unchanged; and of two intersections now having vehicle-actuated signals, one will be unchanged and the other will have sodium vapor lights added. Addition of sodium vapor lighting at one highway grade separation is also contemplated. While this schedule is tentative and subject to change, it indicates the scope of the treatment planned.

Standards Raised

Two occurrences since the modernization program was initiated have materially affected the original concept of the ultimate plan. One of these was the enactment of a freeway law in Illinois in 1943 and the subsequent designation of U. S. 66 as the State's first freeway. The other was the authorization by the Federal-aid Highway Act of 1944 of a National System of Interstate Highways, for which U. S. 66 is considered an inevitable selection. The latter has resulted in some upward revision of standards to fit the requirements for interstate highways.

The freeway law, by authorizing limitation of access to highways designated under its provisions, has permitted a much more progressive development of U. S. 66 than originally planned. It is now contemplated that, in general, direct access to the highway will eventually be limited to intersecting highways. This will involve the acquisition of access rights of all abutting properties—a process which is well underway but will require considerable time to complete. At cities and villages, the number of access points will be held to the minimum consistent with affording reasonable

View of old and new two-lane pavements about 1½ miles north of Sherman, showing improvement in horizontal and vertical alignment. The old pavement has been taken out of service. Eventually it will be replaced by a new two-lane slab conforming to the line and grades of the one on the left.

Service drive alongside of two-lane pavement at Broadwell.

opportunity for local traffic to enter or leave the freeway. The number of rural intersections also will be reduced by relocation or closing off of unimportant roads.

Although making U. S. 66 a freeway is primarily a matter of utilizing legal powers, its proper functioning as such requires certain engineering adjustments. The elimination of numerous intersections with local roads and streets requires that more service drives be provided than previously planned. The concentration of all merging, emerging, and cross traffic movements at intersections—and the reduction in the number of intersections—dictates a higher level of intersectional treatment than originally contemplated. Grades will be separated at a number of highway crossings where costs are commensurate with the benefits derived, and all other intersections with principal highways will be channelized.

New Problems

The development of U. S. 66 as a freeway will introduce a number of new problems in traffic control. For some of these there is no background of experience in Illinois to furnish guidance toward their proper solution. One matter now having serious study arises from the fact that eventually the only means of access to adjacent commercial establishments will be by way of intersecting highways, or by service drives usually reached from intersecting highways. Many such establishments will seek sites on an intersecting highway as close as possible to the freeway, and the more heavily-travelled the intersecting highway is, the more attractive it will usually be. Unless there is careful control over traffic entering or leaving a business property so located, that traffic will seriously conflict with normal traffic on the intersecting highway immediately adjacent to the critical point where contact is made with the freeway. If a service drive connects with the intersecting highway, the situation is further complicated by the introduction of additional conflicting movements. It is apparent that unless carefully-calculated measures to control traffic to and from such commercial properties are adopted, a highly congestive and hazardous situation will probably develop. Although this phase of traffic control requires individual treatment of each intersection, it is believed possible to establish certain basic principles for guidance in arriving at specific solutions. Such principles are not yet fully developed,

but it is obvious that they concern one of the most serious problems of design and control connected with any freeway.

Continuation of the rebuilding of U. S. 66 will be an important feature of Illinois' post-war highway program. It is expected that the next few years will see the completion of a modern thoroughfare fully in keeping with the importance of this highway.

Safety In Industrial Motor Vehicle Operation

by EDWARD R. GRANNISS, *Director,*
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SAFETY is relative. That is, none of us is ever completely safe from hazard, we are only more safe in one place than in another, safer at one time than another, or safer in one job than another. Relatively speaking, we are safer riding in an airplane today than we would have been going for the same ride twenty-five years ago. In fact, we would be safer driving a scheduled airliner through the skies today than driving a commercial truck down the highway.

A quotation from Ripley? Not at all. Believe it or not, this is right out of the Workman's Compensation Rating Manual for New York State. The workman's compensation rate for airlines is $3.51 per hundred dollars of payroll for all flying employees, while the comparable rate for the trucking industry is $13.42, nearly four times as high. And compensation rates, being compiled accurately from payments made to employees injured accidentally, are a good indication of the relative hazards of operation.

Of course airplane operation is not the only job that appears safer than truck driving. Stevedoring is one of industry's most dangerous occupations, involving the handling of all kinds of cargo, as does trucking. The present rate of stevedoring is $10.28, 75% that of trucking, but, in spite of increased compensation benefits in New York, that rate is now nearly half of what it was ten years ago.

Examples of reduced industrial rates are many. Machine shops, for instance, with a low rate of $3.00 five years ago, reduced this rate 25% to a present rate of $2.24. A big restaurant concern including a large proportion of drivers and chauffeurs in its 5000 employees, improving its experience, on a dollar rate from a 52.7% debit to an 83.67% credit in ten years. Converting this to money, a $72,000 annual premium was reduced to one of $20,000, a considerable saving.

While several factors are involved in compiling compensation insurance rates, that of lowered accident frequency and severity is most important and is the only one the Safety Director can control. Certainly, improvements that have been made in some industrial rates can be made in others, whether or not the operation of motor vehicles is involved.

The thought is advanced occasionally that a better understanding and a closer cooperation between motor vehicle and industrial safety engineers would lead to improved safety work in both fields. This thought, however, is contrary to a more widely accepted opinion that accident prevention in regard to industrial operations is

something different from accident prevention as applied to traffic or the operation of motor vehicles. There are some who believe that in each case a separate science is involved, that each has its separate approach and need for differently trained safety personnel.

Rather than to either deny or affirm this contention in the beginning of this discussion, it might be better to explore the principles of applied safety and see if and where the application is different for the man in the shop or warehouse and the man who drives a truck on the highway. A review of safety program building would make a good start.

Safety Program Building

The first step, in any case, is for the Safety Director to prepare a sensible and well-balanced program, one that is tailor-made for the operations in question, so that he will know the status of his work at any given time, and, particularly, what his next and most logical step may be. To accomplish this, policy, that is scope and objective, and procedure must be spelled out.

Webster gives a good definition of policy. It is "wisdom in managing affairs." It is therefore worthy of considerable detailed discussion, even though such discussion may be academic.

Obviously the objective of any safety program, whether it is concerned with motor vehicles or industry, is to prevent accidents. But in every case there are various categories into which accidents fall and the Safety Director must know for which categories he has responsibility.

For instance, is the motor vehicle Safety Director expected to control accidents to men both on and off the job, when they are in the garage as well as when they are behind the wheel? Is his educational program supposed to teach them how to be safe while working in their backyards as well as when they are on the loading dock? He should know the answers to all these questions.

The plant Safety Director also must know the scope of his activities. Does his program include accidents to the public, accidents to contractors working on his plant property, injuries from the product his firm is manufacturing or perhaps other categories?

Determination of Authority

Once the scope of program coverage has been determined, the next step in establishing safety policy is the determination of authority. It must be decided whether the safety department will be only advisory or whether it also will have enforcement functions. In some places, for instance, safety personnel have the power of veto. That is, safety men can stop an operation that is considered sufficiently unsafe, hold in the garage a vehicle not ready to take the road,—but in other instances they may act only in an advisory or consulting capacity.

Another point concerning authority is what might be called the "chain of command." How much authority does the Safety Director have over subordinate safety officers in the various subdepartments or installations? Frequently the responsibility for safe operation of each unit of an organization rests with the supervisor of that unit, and safety personnel report directly to that supervisor, while of course being bound by the safety policy of the organization and having access to the principal Safety Director for help and advice. But unless this is carefully spelled out and understood, friction can develop and destroy much effective safety work, whether in transport or manufacturing activities.

Then, finally, there is the question of whom the principal Safety Director reports to and what the scope of his duties and authority may be. It is usually advantageous to have the

backing of the highest executive officer possible. Wherever the safety director is placed, his duties and responsibilities should be defined, approved, and recognized by the chief.

But so much for policy. So far the motor vehicle and industrial safety men attack their problem in the same way. There is no more difference in the approach to accident prevention in the two fields than there might be between two fleets of trucks or two different manufacturers.

Investigating Accidents

In planning procedures it will be found that the same structure will work equally well — even though nomenclature may vary. When investigating accidents, for instance, the industrial man's mind follows this pattern (if he is operating according to the standards of his profession): Nature of injury, agency, part of agency, unsafe condition, type of accident, unsafe act of person and finally the unsafe personal factor. Then follows such supplementary information as names, locations, and occupations.

The motor vehicle accident investigator could do far worse than follow this procedure. As a matter of course he describes both personal injury or property damage. His agencies, usually automobiles and the objects with which they come in contact may be fewer in number than the variety found in industry, but they still should be separated into appropriate groupings. The unsafe condition of the vehicle or roadway follows as a routine matter. Types of accidents, while limited to collisions, are still broken down as to kinds such as head-on, rear-end, side-swipes, etc. Unsafe personal acts are virtually the same for either vehicle or plant operation as are the unsafe personal factors which include both physical and mental deficiencies.

An Example Showing Similarity

For further similarity of pattern, we may consider two groups of accidents, one industrial and one traffic.

In a manufacturing plant there were a number of accidents from an obviously common cause. The men had been injured by objects falling on them from overhead. They had acted unsafely in going into an area serviced by an overhead traveling crane. As a result, an educational program was conducted in this plant, pertaining to this specific hazard and, as well, danger signs were posted. In addition, as much of the hazardous area as possible was isolated by guard rails. All of this activity, undoubtedly saved others from injury from the same type of accidents.

However, further investigation of several of the accidents developed more pertinent data. In one case, the injured man was found to have poor eyesight and did not know when he passed under an overhead load. In another case, the worker was aware of the chance he took, but he was a piece-rate worker and the shortest route to his raw material took him under the traveling crane. Otherwise he would have had to walk all around the department, taking several extra minutes for the round trip, which would have cut deeply into his day's pay. In a third case, the injured person had been told several times that he was not to pass under the overhead load, but he had disobeyed orders.

Now consider a group of motor vehicle accidents, all of which occurred at the same street intersection and all of which were said to be due to the common cause of "driving too fast." As a result, further education was undertaken to induce the operators to drive within the prescribed speed limits. Also, physical safeguards were erected to further control the speed of all vehicles at this intersection—slow and stop signs were erected and the pavement was painted with appropriate markings.

Again, however, further investigation of the individual accidents brought out additional information. In one case the injured man had poor eyesight which had affected his judgment of speed. In another case the driver was confronted with a top-heavy delivery schedule. He had too many calls to make and too much distance to cover in the time between which he was scheduled to leave and report back at his garage. In the third case the driver had been warned several times about fast driving, but he was possessed with an inherent recklessness that no one had been able to overcome.

And so the pattern in both groups of accidents was similar. Two of the men had poor eyesight, which signs and instructions would not correct. Two others were handicapped by poor job arrangement and would have been penalized for working safely. The third pair had a wrong mental attitude and needed something more drastic than instructions. All would probably have had accidents at other unguarded locations unless further safety work was done.

The respective Safety Directors, even though working in different fields, had almost identical problems.

The point of this discussion is that if there is but one approach to good safety work, that either a motor vehicle or industrial safety engineer, assuming that he is properly qualified, need not change his brand of thinking to undertake safety work in the other field. Safety problems in the garage, on the loading dock or even in making the product, are no different basically from its delivery by motor carrier.

Certainly no motor safety engineer can afford to ignore so-called industrial accidents associated with his vehicle operation on the basis that their control can be effected only by an industrial specialist. Nor can an industrial safety engineer use the same excuse for ignoring accidents to drivers who deliver the product of his plant.

Success in any specialized field is dependent on thorough application of the fundamentals. The medical profession, for instance, has its specialized areas, but each specialist depends first on a thorough groundwork in medicine for practicing his specialty. So too, must the safety man use the elements of safety, if he is to do his specialized job well. The same accident prevention principles that apply to industry are necessary in motor vehicle operation. In that respect, the two fields are closely allied. The problems of each will be similar, fundamentally. It seems reasonable, therefore, that we in these fields should find more time and more opportunity to meet with each other and discuss the answers to these problems.

The Port of New York Authority

THE Port of New York Authority celebrated its twenty-fifth anniversary on April 30 of this year.

The Port Authority was created in 1921 in response to a need for a solution to terminal and transportation problems in the Port District. It was organized as the corporate instrumentality of the States of New Jersey and New York to study those problems, to make plans for their solution, and to carry out those plans.

By great good fortune, the Governors of both States were men who measured up to the call of that hour. Governor Walter E. Edge was in his first term as Governor of New Jersey —by coincidence, and after a 25-year interval devoted to other public work, he is serving his second term as Gov-

ernor of New Jersey today. Governors Alfred E. Smith and Charles S. Whitman were available to take the leadership in New York. They brought the problem to the people in their public addresses; they recommended the creation of a port authority to the Legislatures; they resisted all opposition. Thus, Governor Edge, in a special message to the Legislature at that time, described the objective of a port authority as a "farsighted interstate commission, which is oblivious to sectional prejudices and intent upon developing an important section of the country along broad lines."

Governor Smith graphically illustrated the inefficiencies of the terminal setup in New York at the time by describing the wanderings of a character whom he called "Mr. Potato" in trying to get through the labyrinth of New York's terminal system to the table of the housewife.

The Port of New York District includes that part of the metropolitan district in New Jersey and New York lying within a radius of about 25 miles of the Statue of Liberty, commercially and economically a geographic unit, though cut in two by a political (state) boundary line.

The Commissioners of the Port Authority

The twelve commissioners of the Port Authority are appointed by the Governors, six from each state. They serve for overlapping terms of six years each and receive no compensation except the satisfaction they derive from public service. For the most part, the Port Authority Board has been comprised of men who have achieved distinction in public life, in business or in the professions. Former Governors, bank presidents, and outstanding businessmen serve as commissioners.

The functions of the Commission are similar to those of the directors of a private corporation. The Board meets about once a month in formal session. Most of the basic work is done in committees, of which there are four. Organized on a functional basis these committees correspond with the planning, financing, construction and operation of Port Authority facilities.

To a large extent it is the honorary character of the service of the commissioners and the separation of their offices from the detailed staff work of administration, research and recommendation, that has made possible the independent and detached judgment and guidance of some of the best minds in the port District.

The Staff

Related in importance to the principle of unsalaried commissionerships is the Authority's career Staff selected and promoted solely on the basis of ability and achievement. The general principle is to promote from within the Staff whenever possible, but that desirable principle is not carried far enough to deteriorate into the deadening process of inbreeding. Whenever skills, experience or training are required that cannot be found within the Staff, the Authority goes outside to get the best person the market affords for the job.

It is a tribute to the important part the Port Authority employees have played in twenty-five years of progress that over 350 have been in its service for fifteen years, about 625 for ten years or more, and over 900 for at least five years.

Transportation Facilities

The Port Authority's bridges and tunnels join the two great states of New Jersey and New York into one vast business, residential and recreational area. From November, 1927, to May, 1946, these world famous crossings carried 390,595,000 people between the neighbor states. The importance of these facilities was emphasized during the war when three-quar-

ters of the traffic was of a war essential nature.

A pioneering feat in river crossings, the $50 million Holland Tunnel, named in honor of its first chief engineer, the late Clifford M. Holland, was completed in 1927, and first operated by the Port Authority in March, 1931. Providing a direct link of four traffic lanes between Canal Street in Manhattan and 12th Street, Jersey City, the Holland Hunnel today is the busiest vehicular tunnel in the world.

The Lincoln Tunnel, newest Hudson River crossing, provides four underwater traffic lanes connecting mid-Manhattan at Dyer Avenue with Weehawken, New Jersey. Construction on this $80 million tunnel was started in March, 1934, the first tube was opened in December, 1937, and the second in February, 1945.

Spanning the mighty Hudson, the majestic George Washington Bridge built at a cost of $60 million connects the Fort Washington and Amsterdam Avenue plaza in New York with Fort Lee in New Jersey. Its main span of 3,500 feet is twice the length of the longest suspension bridge ever built before. Completed in 1931, it marked the beginning of a new era in bridge building. Its main cables contain more than 105,000 miles of steel wire —enough to encircle the world four times at the Equator. The cables rest in saddles on top of towers 600 feet high.

The Outerbridge Crossing, spanning the Arthur Kill between Tottenville, Staten Island, and Perth Amboy, New Jersey, provides a convenient and uncongested highway to the New Jersey seacoast and points south and west. Opened to traffic in June, 1928, its name honors Eugenius H. Outerbridge, first chairman of the Port Authority. Opened on the same date as the Outerbridge Crossing, the Goethals Bridge over the Arthur Kill furnished a highway connection between Howland Hook, Staten Island, and Elizabeth, New Jersey, and is an alternative to the Outerbridge Crossing route, particularly convenient for through-traffic between Brooklyn and New Jersey. Its name, of course, commemorates General George W. Goethals, builder of the Panama Canal and first chief engineer of the Port Authority.

The third Staten Island-New Jersey crossing is the Bayonne Bridge, opened to traffic in November, 1931, and connecting Port Richmond, Staten Island, and Bayonne, New Jersey. In addition to providing a direct crossing over the Kill van Kull it furnishes a continuous highway route between Manhattan and Staten Island, by way of the Holland Tunnel. It is the longest steel arch bridge in the world. Strikingly beautiful in its design, it is one of the most spectacular bridge structures in the metropolitan area.

The cost of the Goethals Bridge and Outerbridge Crossing, which were financed together was approximately $17 million, the Bayonne Bridge, $13 million.

Railroad Terminal

The Comprehensive Plan of 1922 envisioned the construction of a series of union inland railroad terminals for less-than-carload freight. At each station the shippers in the vicinity would send and receive all package freight without regard to the railroad over which it was shipped. Port Authority were to be "post-offices" for such freight.

The Port Authority's Union Inland Railroad Freight Station, built at a cost of $15 million, and completed in 1932, occupies the entire block extending from 15th to 16th Streets between Eighth and Ninth Avenues in Manhattan. The first floor and the basement floor are occupied by railroads and operated as a union freight terminal. Under their agreement of occupancy, they pay the nominal amount of ten cents a ton for each ton

of freight moving through the terminal. The terminal is supported entirely by the rentals which are received from the fourteen upper stories which are fully developed and leased for light-manufacturing, warehousing, and office purposes.

This freight station in 1945 handled for shippers throughout the Port District about 115,500 tons of less-than-carload freight moving by way of the eight trunk-line railroads. In addition, the railroads handled some 242,000 tons of freight through the Railway Express Agency terminal in the basement of the station.

Grain Terminal

The 2,000,000 bushel Port Authority Grain Terminal on Gowanus Bay, Brooklyn, was formerly operated by the State of New York as a part of the State Barge Canal System. The State came to the conclusion that its general usefulness as a port facility could be better promoted by the Port Authority. On Governor Thomas E. Dewey's recommendation, the terminal was therefore transferred to the Port Authority on May 1, 1944.

With a grain storage capacity of about half the total available in the Port of New York, the terminal completely rehabilitated, in 1945 handled more than 2,000,000 bushels of grain. A major part of foreign shipments of grain are handled in full cargo lots requiring direct loading to ocean vessels. Present inability to accommodate such shipments will be overcome in the near future by the construction of a new pier and grain gallery at the terminal which will permit direct loading from storage bins to ship's hold. The 550-foot gallery will be capable of accommodating four ships at one time. A part of the terminal property, the Columbia Street pier, has been rehabilitated and improved by the Port Authority.

Truck Terminals

The Authority has under construction the world's two largest motor truck terminals, one in downtown Manhattan, and the other in Newark, New Jersey. Designed to reduce street traffic congestion and the high cost of distributing merchandise freight in the port area, these post-offices for truck freight will be completed early in 1947 if building materials are available.

Extending from Washington to Greenwich Streets, and from Spring to Houston Streets, the Manhattan terminal, a thousand feet long and 175 feet wide, will have a daily capacity of 2,000 tons of merchandise freight. Located a few blocks from the Holland Tunnel and the steamship piers, and providing facilities for the consolidation of local delivery loads, this terminal is expected to effect a saving of more than 1,800,000 truck miles, and more than 15,500,000 truck tire miles a year. There will be a freight platform 800 feet long and 80 feet wide equipped with an overhead circular chain conveyor serving both sides of the island platform by means of trailers. It is estimated that the rehandling of freight will be held to 15 per cent. This is an increase in efficiency of 25 per cent over any existing terminal. The efficiency of road-haul units will be increased 20 per cent by prompt turn-around at this $4,850,000 facility.

Of prime importance in reducing the increasing problem of Manhattan's street traffic congestion, the terminal will make it possible for local shippers and receivers to pick up and deliver consolidated consignments from many over-the-road carriers with their own local and city trucks. A fleet of small trucks will operate pickup and delivery service with efficiently routed, consolidated loads between the terminal and steamship piers and shippers' places of business.

The roof of the terminal will provide parking space for as many as sev-

enty complete tractor-trailer units, thus taking off the street all vehicles awaiting loading at the terminal.

The Newark terminal is being built on a 29-acre site immediately south of the Newark baseball grounds, and east of Route 25. It is expected that this $2,650,000 terminal will result in savings that will help maintain the competitive position of industrial and distribution centers in Northern New Jersey. With a total daily capacity of 2,500 tons, it is estimated that the truck freight station will handle a minimum daily volume of 1,600 tons. This should bring about economies in truck transport costs of from $288,000 to $432,000 a year, or from 60 to 90 cents a ton in terminal and pickup and delivery operations. A single carrier with a volume of less-truckload freight of only 20 tons a day will save from about $3,600 to $5,400 a year.

High motor freight rates between communities in Northern New Jersey and various sections of the country seriously affect the ability of shippers and receivers of freight in this territory to compete with other regions in producing and distributing goods. The Port Authority's Newark Motor Truck Terminal will therefore be of real benefit to business and to wage earners in the entire community.

The 1100-foot by 200-foot terminal structure will be furnished with a freight platform 1000 feet long and 100 feet wide, providing 175 back-up spaces for local and long-haul trucks. As in the case of the Manhattan terminal, this freight platform will be equipped with an automatic chain conveyor system for platform trailers that will transfer freight on wheels from one motor truck to another. There will be adequate parking space, and the terminal property is large enough to permit the establishment of a second freight platform as a concentration point for less-than-carload rail freight, water and air freight, and any other mixed merchandise freight requiring platform consolidation for movement outside the terminal area.

A part of the terminal will be reserved as a public freight station to which any shipper can send his own truck or contract truck hired by him, to pick up or deliver his freight to the over-the-road carrier. Any local private carrier owned or hired by a shipper will be permitted to use the public freight station section of the terminal for pickup or delivery of the shipper's freight in place of the carrier pickup and delivery.

The Proposed Port Authority Bus Terminal

At the request of the City of New York, the Port Authority progressed plans for the construction in mid-Manhattan of the world's largest union bus terminal. The proposed $15 million "Grand Central Bus Station" would occupy the entire 200 by 800-foot block extending from 40th to 41st Streets, between Eighth and Ninth Avenues, outside of the congested traffic area. Connected by overhead ramps with the Lincoln Tunnel which handles 75 per cent of the 2,000 intercity buses which enter Manhattan daily, the Port Authority's Union Bus Terminal would replace the eight individual terminals now scattered from 34th to 51st Streets as far east as Sixth Avenue. Short-haul buses which make up 85 per cent of the traffic would use the ramps, while the remainder would use 40th and 41st Streets only as far as Eighth Avenue.

The central location of the terminal, only a block from Times Square, would permit bus passengers to reach important business, amusement and shopping centers with the shortest possible walk to subways and surface transportation. Such a terminal would provide the New Jersey commuters and other bus travelers with the most modern bus station in the country and would afford them a great saving in travel time through

the avoidance of traffic delays. It is estimated that 90 per cent of the 50,000 bus passengers entering and departing from mid-Manhattan each day are residents of Hudson, Bergen, Passaic and Essex Counties, traveling to work, or to shopping and amusement centers in New York. Most of the remainder are travelers to plants, businesses and recreation centers in New Jersey.

Port Development

Work in the field of Port Development has the positive objective of maintaining and expanding flow of traffic. This requires constant study of the need for physical improvement such as new terminals, channels, highways, for new methods of handling freight and passengers, and for new trade routes to accommodate the changing demands of time and trade.

These activities may range from the promotion of a dry dock to the support of an air route to the Far East. They are all directed to the end that the Port of New York may be able to offer services that are cheaper, faster and more certain than those of competing ports.

In this field are recommendations to the Corps of Engineers with respect to channels, anchorages and pier lines; the support of measures that would improve waterborne commerce between the Great Lakes and New York through the deepening and improving of the New York State Barge Canal. The Port Authority is active in the study and promotion of sound highway developments in, out and throughout the Port District, cooperating fully with State and local highway authorities in this connection. Its immediate program of traffic relief contemplates the expenditure of about $20,000,000, including terminal, viaduct and roadway construction, as well as tunnel and bridge approach improvements.

Chicago Office

On October 1, 1945, the Port Authority opened its first field office in Chicago to promote and protect the commerce of the Port of New York. Establishment of a Chicago office was approved by the Commissioners last May as part of the program to meet the intensified competition from rival South Atlantic and Gulf ports for Midwest commerce. This port competition was stepped up as a result of the rerouting of freight away from New York during the war to avoid submarine activity. The ports which benefited from such re-routing have done everything they could to maintain their new-found traffic.

The Chicago office works closely with railroads and steamship lines to encourage the routing of freight through the New Jersey-New York gateway. Personalized service is made available to shippers, and data on shipping conditions, schedules and other information and assistance is furnished promptly.

Air Transportation

The Port District is a logical center for world air traffic since it enjoys the greatest air traffic potential in the world. The Port Authority continuously is making vigorous efforts toward the certification of the port area as the primary foreign and domestic terminal of the airways and for the development of facilities and services to help make this port the crossroads of the world's air lanes.

The Authority has intervened on behalf of the New Jersey-New York port area before the Civil Aeronautics Board in connection with the establishment of direct air trade routes from the Port of New York to traffic centers in Latin America, Europe, South Africa and the Orient. It has appeared before the CAB on behalf of local service between the metropolitan area and New England and Eastern New York State, the Middle Atlantic States, Ohio and points beyond.

Financing

In his work on revenue bonds John

F. Fowler says that the financing of The Port of New York Authority stands out as a landmark in the history of revenue bond financing because its first issues were very much larger than any previous public offering of revenue bonds; because most of them were for an entirely new type of revenue bond project, toll bridges and tunnels; and, finally, because they introduced to the public for the first time agency revenue bonds, issued by a new form of body known as an "authority."

During the past twenty years the Port Authority has issued bonds for new projects or refunding purposes of par value of $492 million and has expended over $240 million on the construction of new port facilities. Revenues over the past 18 years amounted to $216 million. Of this amount, $50 million was spent for operating expenses, $83 million for interest payments, and the balance of $83 million applied to debt reduction, the establishment of reserves, and additions and betterments to our facilities. At the present time its annual interest charge is $4,800,000. Interest costs have ranged from 5.11 in 1929 down to the sale in February of $18,757,000 of our 40-year bonds at a net average interest cost of 1.358, the lowest rate ever enjoyed by any state or municipal agency.

All Port Authority projects must operate on a self-supporting basis, for while any surplus from its operations ultimately belongs to the States of New Jersey and New York, it cannot turn to the taxpayer for reimbursement of losses. The entire concept of the Port Authority directs its projects into that narrow zone where public terminal facilities can operate on a self-supporting basis, and so can be realized without adding to the general tax burden.

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Progressive Public Transit is Essential to Prosperous Communities

EDITOR'S NOTE:

This is the text of a talk by Charles E. Ebert, President, Philadelphia Transportation Company, before the Annual Meeting in Atlantic City of the U. S. Chamber of Commerce.

TRANSIT has one need of first importance. If this one need is satisfied all its other needs will be taken care of and our communities will get the full benefit of what the transit industry offers. This primary need is the recognition by Chambers of Commerce, merchants, government agencies and the public that sound and progressive transit is an essential requisite of prosperous communities.

Man is a gregarious creature. From time immemorial he has gathered together in groups to live. The fact that man has always chosen to live with his fellow men is the chief reason for the modern city. And that fundamental instinct of mankind is a fair guarantee that the metropolis is here to stay. True, there is the lure of the suburbs, where the air is fresher and the grass seems greener. But the city itself still remains as the locale of thousands of homes, where city and suburban dwellers alike earn their living and follow their cultural and entertainment pursuits. An instinct of equal importance is that, within the city, people move about, here and there, usually for short distances and for countless reasons, but always they move. So we have the makings of problems for the city planners, and for the men who operate the industry of which I am a part. Granting the interest and understanding of those engaged in city planning and administration, the transit industry can make distinct contributions to the solution of these pressing problems.

90,000 Transit Vehicles

Just what is the transit industry? The answer to that question, I believe, depends upon the point of view from which you regard us. If you live in a great American city, the chances are almost six to one you will call on us daily to take you to the office or factory, to stores, to church, to school; to the Zoo or ballpark, or down to the theatre to see the latest movie. Approximately 85% of the adult population of large metropolitan centers use public transit. They ride our subway and elevated trains, our street cars, trackless trolleys and buses. All together, the American people turned to transit for 23 billion short rides last year. That may be compared with 900 million carried by the railroads and a little over 500 million on intercity motorbuses (longer distances of course). Rides per capita on public transit vehicles range from 150 a year in cities of 50,000 population to more than 500 a year in cities of one million or more. To handle this tremendous job the industry has available 27,000 street cars, 48,000 buses, 10,000 elevated or subway cars and 3,500 trackless trolleys, or a total of about 90,000 vehicles.

If you own transit securities, probably you have enjoyed a reasonable return on your investment in the past few years. Right now your brow is furrowed as you watch rising labor costs and other operating expenses

Highway Marking Aids For The Traffic Engineer

SELF-STARTING, MULTIPLE LINE STRIPER

A revolutionary item in line stripers is a unit cooperatively developed by the Prismo Laboratories, Huntingdon, Pa. The striper employs a Schramm "powair" unit which delivers 21 cubic feet of air per minute at 60 pounds pressure. Three air-operated atomizing spray guns and glass sphere dispensers may be used with or without skip-line mechanisms. The unit is streamlined and, although weighing approximately 700 pounds, it is well balanced and easily guided. The speed of operation is from three to seven miles per hour and a trailer for the operator is easily attachable. Capacity of the tank is 12 gallons. The unit has both air agitation for the paint and cleaner attachments to keep the spray guns clean. A special feature is a pavement cleaner making pre-cleaning a simple operation. The motor and compressor are self-starting and deluxe models can be fitted with spot lights for night marking. For full details write the Prismo Laboratories, 300-312 Allegheny Street, Huntingdon, Pa.

SPHERE DISPENSERS for REFLECTIVE MARKING

New glass sphere dispensing equipment is available for attachment to standard centerline marking machines. Air-controlled or manually operated, single-line or multiple pattern dispensers, are in use with push-type or truck-mounted striping units. The dispensers are part of a service offered by the Prismo Safety Corporation, Huntingdon, Pennsylvania, in conjunction with their packaged centerlining materials. Inquiries directed to the Prismo Laboratories, Huntingdon, Pa., will receive full data on dispensers available for any particular striping machine.

REFLECTIVE SIGN MATERIALS for SPRAYING

Years of research have resulted in the presentation of a reflective sign material which can be sprayed directly on wood, metal, hardboard, and other types of sign backing material. With this new system, intermediate backings and adhesives are eliminated and the reflective materials actually become part of the sign even as an enamel would be an integral, non-peeling sign coating. Reflectorization costs in both white or yellow are reduced to almost one-fifth of previous reflectorizing costs and legibility is increased immeasurably for night traffic. Experience with this reflectorizing system in actual road tests indicates a life well over five years. No additional capital application equipment is required. Information about this kit can be secured through the Prismo Safety Corporation, Huntingdon, Pa., and from any Prismo distributor. In writing, request details on the Prismo Sign Kit.

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HUNTINGDON · · · · · · · PENNSYLVANIA

push against rates of fare pitched too low in many cases to support adequate standards of service to the public, to say nothing of a fair return on capital.

As a motorist, sharing congested city streets with motormen and bus operators, you may have a viewpoint of transit peculiarly your own. I shall not discuss that situation other than to assure you we are constantly impressing on our employes that highway courtesy is a most important aspect of their job.

If you are a business man, transit is the instrument that brings most of your employes to your office or plant in the morning and takes them home at night. Or you may provide us with electric power, or gasoline, or tires, or any of the thousand-and-one items needed to supply the service which we furnish.

Philadelphia Studies Cited

We shall expect you to be particularly interested in transit if you are a merchant, for shopping dollars follow the car and bus routes. You know that transit brings you customers, but just how many you may not realize. A carefully-conducted survey, recently completed in Philadelphia, revealed that almost nine out of ten customers of central city department stores and large specialty shops reached the shopping counters via local transit vehicles. As compared with the 88% who came on subway trains, street cars, buses, trackless trolleys and suburban railroad lines, only 8% arrived by automobile, 3% walked, and less than 1% used taxicabs. These ratios, incidentally, show little variation from those disclosed by previous surveys extending back into the 1920's.

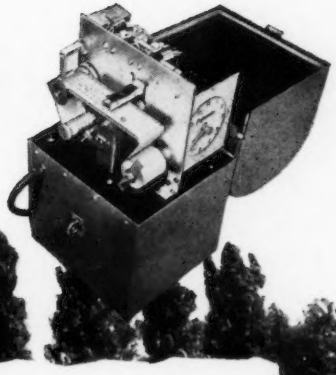
Another recent survey in Philadelphia revealed that, of all the parked automobiles lining the curbs of narrow downtown streets, only 2% belonged to shoppers. This fact had a decided influence on the attitude of merchants toward parking and was an important factor in subsequent action to reduce traffic congestion, which I shall discuss briefly at this point.

The end of the war had brought unprecedented congestion to downtown Philadelphia. All interests realized something had to be done and the Philadelphia Committee for the Relief of Traffic Congestion was formed to do the job. On this Committee were citizens representing business and civic interests, city officials, traffic engineers and representatives of the automobile clubs and the transit company. The Committee engaged a research firm to get the facts. The parking and shoppers surveys, to which I have already referred, were undertaken. When the facts were published and discussed by all interested elements, action came quickly in the form of a trial City ordinance drastically restricting parking on downtown streets and reversing the flow of traffic on certain one-way thoroughfares to eliminate long-standing bottlenecks. Police enforcement was strict. Best of all, the new regulations received united support of the merchants, the Chamber of Commerce, the automobile clubs, and the public in general.

Accidents and Congestion Reduced

Results were most gratifying. Motorists and taxicab passengers get through the central city area in virtually half the time formerly required. Street car riders are saving from 15% to 22% in time. Accidents have been reduced. The overall result was so universally beneficial that the trial ordinance was made permanent. If any one conclusion can be drawn from this successful community effort, it is this—get the facts, then tell the business men and the people. You can count on them and their elected representatives to do the rest. Since this cooperative effort worked so well in Philadelphia, I know that similar efforts in all American cities would be equally successful if all interested

ARE YOU PLANNING AHEAD?



Many state, highway and county engineers are not only "planning ahead" for the construction of new highways and streets, but have already, through the aid of Streeter-Amet Traficounters, made extensive surveys . . . and are ready to put into operation a complete construction program, as soon as facilities and materials are available.

The Traficounter is a precision instrument . . . twice as fast as any other vehicle counter. Easy to install . . . economical to operate . . . at work 24 hours a day, rain or shine. It gives facts that are indispensable to the traffic engineers who do the planning. Write for Bulletin on Streeter-Amet Traficounters.

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	STOP	STP-101	24" x 24"	$6.25	$5
	ONE WAY	ONW-137	18" x 24"	5.20	4
	*ARROW	TRN-117	24" x 24"	6.25	5
	**SPEED LIMIT	SLM-139	18" x 24"	5.20	4
	SLOW	SLW-106	24" x 24"	6.25	5

*Specify direction of arrow ____Left Right____ **Specify MPH Wanted ____MPH

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em.. *FLASH*..they reflect!

"Scotchlite" *doubles* highway safety, for it provides exactly the same warning as any ordinary sign by day and a super-brilliant, unmistakable warning by night. Illumination can't fail, because "Scotchlite" comes to life by reflected rays from headlight beams. And recognition can't fail because "Scotchlite" gives *overall* reflection . . . makes signs the same size, same shape, same color night and day.

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bodies will consult and cooperate with the local transportation officials.

Street Capacities Limited

The major problem arises from the fact that we have too many vehicles on our streets, most of which were designed for the horse-and-buggy days. Modern highway construction and traffic engineering will accomplish much in many sections of the country. But we must face the fact that street widening in central city areas cannot be undertaken except at virtually prohibitive cost and effort. City streets do not now have, and cannot be made to have, enough capacity for all to travel in private vehicles. Even if this were possible, where could the vehicles be stored in congested centers? Based on the national average load of 1¾ persons per automobile, each auto passenger requires 140 square feet of parking space. The average office worker requires about 150 square feet of office space to do his work. Obviously then, if everyone tried to come to work in automobiles, another building the same size as each office building would be needed for parking. And that says nothing about the customers.

Street-widening on a large scale is not the answer. The present central-city street facilities are all we will have for some time to come, perhaps with certain relatively minor modifications and improvements. We have little choice except to make the best use of what we have. And at this point, gentlemen, is where public transit men must be called in.

Much of our thinking and talking is about moving vehicles rather than people. Transit is an efficient user of street space because it moves people. The average citizen, traveling in a street car or bus, uses only 70 square feet of street space. As an automobile rider he requires 500 square feet—seven times as much. Putting it another way, the maximum number of people that can be carried by a single lane of automobiles on the most modern grade-separated super highway, is 2600 an hour. A lane of buses, operating on an ordinary city street and contending with crossing delays, has a capacity by moderate loading standards of 9,000 people an hour. Street cars can move 13,500 an hour. These figures illustrate the point that public transit uses street space economically, that it keeps moving and that provision for public transit facilities in city planning programs offers a practical low-cost method of relieving traffic congestion.

Further Restrictions

In the future everyone must be prepared to accept greater restrictions on the use of city streets. In general, the individual citizen may not expect to use 500 square feet of street space for his automobile compared with the 10 square feet used by the pedestrian. He cannot expect always to deliver goods at the time of his own choosing. Busy sidewalks must not be used for open markets and stands.

We who are responsible for mass transportation within urban areas want to see a development of transit thinking on the part of the Public Roads Administration and of State Highway Commissions in this country. Congress has authorized the enormous expenditure of one and one-half billion dollars on American highways — both urban and rural — during the first three post-war years. This one and a half billion dollars of Federal highway funds is to be matched dollar for dollar with State moneys. One-quarter of the outlay is earmarked directly for urban areas of more than 5,000 population.

My point is this: Federal and State highway men—accustomed to thinking in terms of automobile and truck transportation—are now coming into

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the big cities to tell how to build highways and handsome, wide expressways which will carry automobiles in or through town in jig time.

Now good city planning provides for these through or long distance movements and also the movement within the city of water, electricity, sewerage, telephone communication, and the products of industry and necessities of daily living. But most important of all is the short daily journeyings of the people themselves. No better instrument has been devised for handling this movement efficiently than the cars and buses of the transit industry.

I have touched only lightly on specific needs of the transit industry. Each city and town has its own special problems. All of the men of the industry, both operator and manufacturer, are working hard to augment the attractiveness and comfort of our service. This means new and modern cars and buses, better operating methods, and courteous, sales-minded employes.

In your own community are men in the transit field who are alive to the importance of their service. They know that a well-rounded, prosperous community life depends on efficient transit and they are anxious to work with you on plans for the betterment of your city and its people. Sometimes you may find these men handicapped by rates of fare which do not permit needed progress.

Only too often, it seems to me, our problems have not been understood, nor has our importance to the community been fully appreciated. I say that in no spirit of criticism, since the state of affairs is largely of our own making. We have drawn into our carbarns instead of stepping up in the public square and telling our story. But we have found a measure of pride and confidence in our wartime record. Rubber and gasoline shortages forced a large part of private transportation off the road. Public transit companies stepped into the breach and despite shortages and headaches of their own, brought to the war plants and shipyards the workers without whom the war could not have been won.

Our greatest need is a recognition by Chambers of Commerce, merchants, government agencies and the public, that sound and progressive transit is an essential requisite of prosperous communities. The industry is ready and willing to aid in resolving the problems of the modern city. But to make its best contribution it must have public understanding and a seat at the council table where the planning is done.

★ ★ ★

THE MOTORIST'S PRAYER

Grant me a steady hand and watchful eye,
That no man shall be hurt when I pass by.
Thou gavest life, and I pray no act of mine
May take away or mar that gift of thine.
Shelter those, Dear Lord, who bear me company
From the evils of fire and all calamity.
Teach me to use my car for others' need,
Nor miss through love of speed
The beauties of thy world; that thus I may
With joy and courtesy go on my way.

(Anon.)

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NEW ENGLAND HIGHWAY TRAFFIC AUTHORITIES MEET IN BOSTON

The much discussed post-war period is upon us and as expected, traffic accident tolls are soaring while traffic snarls and parking problems are causing wails of distress from the public and officials alike in every part of the country. Now is the time to act, to put into effect traffic engineering safeguards and improvements and to begin construction of the much needed arterials and parking facilities.

This was the theme of discussion at the Third New England Traffic Engineering Conference, held at the Massachusetts Institute of Technology, Cambridge, June 11, 12 and 13, under the sponsorship of the M.I.T. civil engineering department and the traffic engineering section, Massachusetts Department of Public Works. The National Conservation Bureau, accident prevention division of the Association of Casualty and Surety Executives assisted in staging the conference.

The 276 registered delegates participated in the three-day affair, hearing national and local leaders talk on all phases of highway traffic engineering. The third day was devoted exclusively to Boston area problems. The various sessions were held under the chairmanships of E. F. Copell, Traffic Engineer, Massachusetts Department of Public Works; Prof. A. J. Bone of the M.I.T., and Henry K. Evans, traffic engineer, National Conservation Bureau. Brief welcoming addresses were given by Prof. C. B. Breed and Prof. J. B. Wilbur, acting head of the M. I. T. Dept. of Civil Engineering and by Commissioner Joseph F. Carnes, Massachusetts Department of Public Works. Complete printed proceedings of the conference will be available soon from the National Conservation Bureau, 60 John Street, New York City.

Proposes Pedestrian Aids

Prof. Theodore Matson, Director, Yale University Highway Traffic Bureau, said during the first session that the greatest reduction in pedestrian accidents must stem from installation of physical aids and controls. He pointed out that nearly everybody is a pedestrian part of the time, while only one-third of our population are drivers part of the time, hence special attention to pedestrian safety is mandatory.

Matson mentioned specifically the general need for improved street lighting, safety islands on wide streets, pedestrian barriers at unsafe crossing points, clear pavement markings, adoption of safe play areas, and shortening and improvement of signal timing to better protect pedestrians and encourage compliance with signal control.

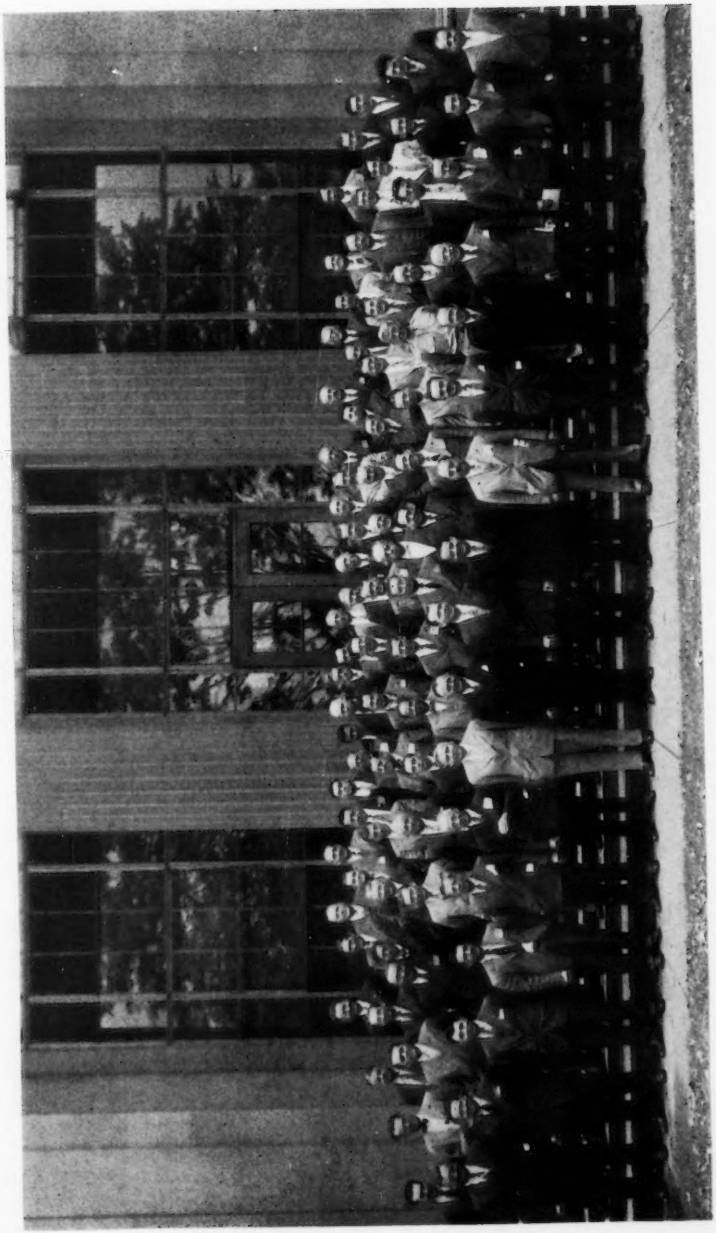
Urges Combination Speed Law

William Greene, Director of the Connecticut Highway Safety Commission stated his belief that a combination of both prima facie and absolute levels makes a sound speed law—say 40 m.p.h. prima facie and 50 absolute on undivided highways. Divided routes could accommodate 55 absolute.

He urged that skilled use of publicity accompany any safety program, in order to sell the public on the necessity for regulations and the utility of engineering advances.

Mr. Greene cited his own State's accident statistics as proof of the value of a well integrated safety program. Connecticut has seen a 42 per cent increase in mileage, but no increase in traffic deaths, comparing the first four months of 1946 to 1945.

W. H. Sharp, Connecticut State Highway Engineer, told of the re-



THIRD NEW ENGLAND TRAFFIC ENGINEERING CONFERENCE REGISTRANTS

cent statewide speed zoning survey, pointing out how speed checks were made and tied in with accident and road characteristics studies to develop the recommended top speeds allowable.

Holmes Cites Mistaken Beliefs

Popular but erroneous beliefs concerning urban traffic flow principles were pointed to by E. H. Holmes, Chief of Highway Transportation, U. S. Public Roads Administration, as proof of the need for more study of urban traffic. Holmes pointed out that in the past, the belief held that through-traffic was a considerable portion of urban flow and should be routed around the urban areas. This has been shown, by P.R.A. studies, to be false. It is now known that through traffic is a small minority—that nearly all vehicles originate or are destined to points within or close to the business district. Holmes exploded the myth of the near past that lane capacity decreases with more highway lanes. Recent P.R.A. studies show the opposite to be true.

Mr. Holmes told of the origin and destination studies made by the P.R.A., stressing the importance of obtaining basic data. He stated that in medium sized cities about ten cents per capita is the cost to conduct basic studies. Holmes said, "the $100,000 for planning in Boston would just about pay for one tenth of a mile of express highway in the congested area. Isn't it better to sacrifice one tenth of a mile of expressway to assure proper location and planning of the entire facility?"

Federal Aid Discussed

D. W. Loutzenheiser of Public Roads Administration said that there are *no* "Federal" standards for highways, insofar as Federal-aid funds go. The Federal-aid program recognizes the right of initiative of the individual State Highway Departments. It is their duty, in obtaining Federal funds, to design the projects.

William J. Cox, Connecticut State Commissioner, pointed out that due to the pattern of distribution of Federal Funds, lower New England will concentrate on urban highway development while the upper States will devote more attention to non-urban areas. He stressed the point that wise provision of traffic artery cannot be determined by considerations of terrain and property development alone, but must be built with a definite purpose in mind to fulfill a carefully determined traffic need.

Property Developers Should Provide Parking Space

Nathan Cherniack, Economist, Port of New York Authority, urged city officials to enact ordinances requiring parking lots or garages to be an integral part of all new buildings built. He told of 8 cities that now have such legislation, and 9 cities require provision for loading and unloading of trucks. Cherniack advocated setting a 5 to 10 year deadline after which all existing traffic generators should have provided offstreet terminal facilities.

How Philadelphia eliminated many of her traffic congestion and accident headaches was told by Robert Mitchell, City Traffic Engineer. He described the surveys made, and the action taken in prohibiting parking on most of the downtown streets, citing the decreases in motor vehicle accidents and increase in speed of traffic movement.

Lloyd Braff of DeLeuw, Cather and Company, Engineers, detailed the methods of making parker questionnaire surveys.

City Planning

Public transit and city planning were the topics discussed the second afternoon of the conference. Harold Hammond of the American Transit Association declared that transit is already doing a great deal to keep traffic congestion down, but that city planners, traffic engineers and municipal officials can help transit to do a

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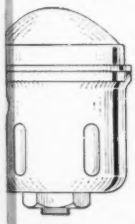

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PEOPLE are proud of their home neighborhoods. They want to see them looking well all the time . . . by night as well as by day.

What other public service caters so much to this natural human trait as good street lighting?

Good street lighting not only increases real estate values and gives people a greater sense of security, but also it builds civic pride, attracts new and desirable citizens, promotes business and encourages industry. In accident and crime reduction, alone, it pays for itself many times over.

In most communities, existing street lighting installations fall so far short of minimum standards that any improvement will attract wide and favorable attention.

Why not grasp this opportunity to be a leader by sponsoring better outdoor illumination in your community? Your electric utility company will be glad to help.

For a free copy of the new Street Lighting Code of the Illuminating Engineering Society which gives you unbiased information on minimum street lighting standards, write The Street and Traffic Safety Lighting Bureau, 155 E. 44th St., New York 17, N. Y.

GOOD STREET LIGHTING WINS PUBLIC GOOD WILL

There is No Substitute for STIMSONITE *Reflectors*

1. Complete line of reflecting signs for traffic and highway:

STOP SIGNS AND PANELS
SYMBOL SIGNS
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ALPHABETS FOR SIGNS
SIGNALS AND MARKERS
HIGHWAY DELINEATORS
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PLASTIC REFLECTORS FOR SIGNS

2. Non-reflecting traffic signs — standard, semi-standard and special.

3. Sign mounting accessories.

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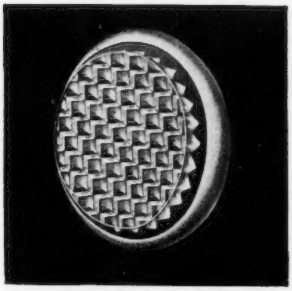

STIMSONITE plastic reflector button —shallow-type or with deep housing. Superior to ordinary buttons in candlepower, uniformity of light output, angular acceptance of light and longer life expectancy.

Traffic Baton for night traffic direction. The light-barrel holds 18 11/16-inch *Stimsonite* yellow plastic reflector buttons. Used by State, County and Municipal Police Departments for radio and squad cars. Also by fire and water departments and public utility crews.

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STIMSONITE REFLECTORS IN SERVICE

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better job in this respect. He urged curb parking restriction where it interferes, and the use of one-way streets. He opined that 10 to 30 per cent of people who now use autos to ride downtown would change to transit, were such traffic improvements made.

Peter Hale, New Haven, Connecticut City Planning Engineer, said that a magnificent job of City and Traffic Planning has been done on paper but an alarmingly small amount of work has gone any further. While the Planner has been developing the paper work, the Traffic Engineer has been out solving the immediate traffic problems, not aware of what the Planner was doing. He urged them to work together more closely.

Grant Mickle, Automotive Safety Foundation, outlined three steps necessary to proper traffic planning: (1) city and urban county should have a regional planning agency, which should adopt a master plan of street and traffic facility growth; (2) arterial streets should be used as boundaries for neighborhoods and not go through them; (3) an official program for studying parking is needed by every urban area.

Boston Congestion

Recent traffic volume counts show figures as high as found in 1941 on Boston arteries, and during July of last year the Sumner tunnel averaged 26,000 cars per day, the highest monthly average yet sustained. These facts were related by Joseph Cressy, Manager of the Massachusetts Highway Planning Survey. He went on to state that conservative forecasts indicate a 50% increase of traffic by 1961 over what it was in 1941, but that he expected Boston to get its 50% in 10 years. He cited an immediate need for off-street parking space for at least 7000 cars.

Central Artery

Phillip Kitfield of the Massachusetts Department of Public Works outlined the State's contemplated highway construction program and described the proposed Central Artery, a 6-lane elevated structure superimposed on an 8-lane surface highway, designed to feed traffic into and out of Boston's downtown area. He said that it will cost 50 million dollars, half of which will go for costs of construction, half for property damage.

Making a plea that "we should do first things first," William S. Parker, Chairman of the Boston Planning Board criticized Governor Tobin's action in asking the Legislature to appropriate money for a Charles River Highway back of Beacon Street.

High-Level Bridge

Indicating that the First Boston Corporation has indicated a desire to invest 40 million dollars or more in the project, William J. McDonald, Boston Realtor, described at length his plans for a waterfront terminal, a high-level bridge connecting with the airport, and a six-lane motor skyway over the city. The plans have been submitted to the Port Authority.

Theodore McCrosky, Executive Director of the Greater Boston Development Committee, Inc., told the Conference that Boston should first break its worst traffic congestion before constructing facilities to accommodate the maximum traffic streams. He cited New York City's example where giving priority to north-south expressways, the heaviest traffic stream direction, has encouraged an increase in North-South traffic which complicated the already seriously congested condition of the East-West traffic.

McCrosky described the Greater Boston Development Committee's four point highway traffic program for 1946 adoption covering (1) off-street parking facilities, (2) a new vehicular tunnel to East Boston; (3) Express highway connections in East Boston; and (4) the Central Artery in Boston.

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Flashing Beacon with
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You can use any information or warning sign — continuously lighted by a lamp in the reflector on the base of the beacon

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flashing beacon with an illuminated sign acts like a **powerful brake** that **slows down** traffic approaching dangerous intersections

This compelling beacon serves a double purpose, it warns that there is a signal ahead and it also serves to put the motorist on the alert. An alert driver is seldom involved in an accident.

There are dangerous intersections in every signalized area where there is a definite need for the advance warning that this signal gives. Typical examples are: an intersection where the approach is around a curve or over the crest of a hill; where high speed main arteries are crossed by secondary roads; where main highways pass through small villages; and where main highways enter suburban or urban communities. It is especially important to have an advance warning beacon if there is a confused background of red advertising signs at the intersection.

Go over the intersections in your area and check the ones where this Crouse-Hinds warning beacon should be installed to reduce accident hazards and save lives. In this way you can prevent the tragedies that are caused by the driver who "didn't see the signal in time to stop".

Write for additional information.

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems — from simple installations up to the most complex heavy traffic problem. Send for your copy.

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ITE NEWS AND PERSONALS

Michigan Engineers See Movies and Magic

President McMonagle called the May 22 meeting of the Michigan section, I. T. E., to order at 7:30 p. m. in Detroit, Michigan. Mr. Barnes reported that the June 21 meeting would be held in Flint, Mich. The president appointed Mr. Knoske and Mr. Levine to arrange for the July meeting. A suggestion was received that a cottage be rented at Lake Chemung for a week-end party.

Following the business meeting, three moving pictures were shown: "Life Stream of the City," "X Marks the Spot", and "Here is Germany."

Mr. Charles Pasternacki, an attorney for the D. S. R. put on a rapid fire show of magic, which was truly "big time" according to Secretary-Treasurer Gunderson.

The following members and guests were present:

MEMBERS	GUESTS PRESENT
Carl McMonagle, *Pres.*	Chas. A. Pasternacki
Ross Harger, *V.-Pres.*	M. C. Talentino
Oscar M. Gunderson, *Secy.-Treasurer*	Sgt. Leo Pouliot
A. F. Malo	R. H. Potts
Holden M. LeRoy	M. W. Pletcher
Arthur W. Knoske	C. S. Michalski
J. L. Wehmeyer	Don Opstad
E. I. Shulman	Don Crosier
Russ Harrison	Chester Glasgow
Sidney Anger	Oliver J. Carrier
T. T. Wiley	Walter Gottschalk
H. A. Barnes	John L. Perentisis
B. A. Cyberski	W. L. Nash
	S. J. Levine
	A. C. Sherman
	F. A. Ronan
	J. D. Cruise

PERSONALS

Richard Siver (Assoc.) formerly with the Traffic and Transportation Division of the National Conservation Bureau, is now employed by the Essex County Road Department, New Jersey, engaged in traffic survey and planning work.

Lloyd Braff (Assoc.) has just completed a complete parking survey for Sioux City, Iowa, population 86,000, for De Leuw-Cather Co., and submitted recommended methods of financing and operation of proposed off-street parking facilities. The survey cost the city approximately $5,000.

Harry Koch (Mem.) recently spent three weeks in California arranging for the organization of a new company which will soon begin manufacture of automatic equipment, some of which will have application to street traffic.

Louis A. Andriacchi (Assoc.) formerly Traffic Engineer with the Michigan State Highway Department since 1933 is now associated with the "Scotchlight" Division of Minnesota Mining and Manufacturing Company. At present he will represent the Division in Washington, D. C., Virginia, North Carolina, and South Carolina in an engineering and sales capacity. Andriacchi served as a Captain in the Army Transportation Corps.

ANNUAL
I. T. E. Conference

OCT. 3-5, 1946

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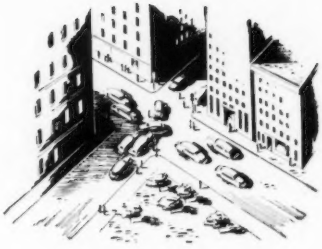

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NO miracle is needed just planned to-the-need application of G-E multi-light signals and pre-timed controllers. With this equipment, there are no mechanical limitations on integrated system planning.

The skill and experience of G-E traffic specialists—teamed up with your own experts—can find an economical solution to the most involved traffic problem. Call your nearest G-E sales office, or write to *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

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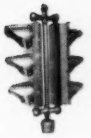
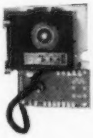


Adjustable-face traffic signals use three basic colors and combinations of arrow, "Walk" and "Wait." Comes in inexpensive units which can be added to existing signals.

Fixed-type traffic signals. Used as 2-, 3- or 4-section units, facing 3 or 4 ways and suspended from mastarms or span wires.

Traffic beacons, adjustable-face or fixed type. Simple, long-life motor-driven flasher assures attention.

Type D synchronous controllers provide co-ordinated timing for progressive flow without interconnecting wires. Easy to set.



Type DJ synchronous controllers for replacing old Type TSM timers in G-E controllers. Provides a basic 6-circuit, 6-interval, non-interconnected controller with flashing feature.

Type DR remote-cycle change controllers can be furnished with triple reset equipment and flash, fire, and shut-down relays. Are interconnected to provide flexible control.

Type DM double and triple dial controllers provide several interval sequences or percentage splits to meet widely variable conditions.

Type D master controllers consist of one or more synchronous timers, with manual or automatic switches for interconnected secondary controllers (Types D, DR, DM). Indoor or outdoor types. For automatic supervision.

Type D pedestrian-actuated controllers are for pedestrian safe crossing. Available in many forms, depending on signals.

TRAFFIC ENGINEER WANTED

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Private Association
in
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Applicants state experience and salary requirements.
Write to
Institute of Traffic Engineers

Stephen E. Butterfield (Assoc.), Major, 3rd U. S. Army, returned to the United States last month to be discharged from the service. He has been on leave of absence from the Connecticut State Highway Department, and expects to return to his old duties as traffic engineer.

Leslie Williams (Mem.) City Planner with the American Transit Association and consultant to the Governor's Commission on Metropolitan Transportation in Rhode Island, reports that Governor John O. Pastore has requested the Commission to explore the possibilities of staggering working hours in Providence to relieve the current problem of congestion. In connection with this survey, Mr. Williams said that the Commission is carrying out a questionnaire survey of planning and traffic officials in cities over 200,000 population to ascertain opinions and experience as to acceptability of a staggered hours program in communities of over 200,000. A report will be made to the Governor, who then will confer with business and labor leaders regarding adoption of the plan.

CANDIDATES NOMINATED FOR INSTITUTE OFFICES

Pursuant to the By-Laws of the Institute of Traffic Engineers, Wilbur Smith, Secretary-Treasurer, has submitted to the membership of the Institute the following list of the candidates nominated by the Nominating Committee for offices in the INSTITUTE for the year beginning at the time of the next Annual Meeting (October 3, 4 and 5, 1946):

President	Thomas J. Seburn	(for a term of one year)
Vice-President	Robert A. Mitchell	(for a term of one year)
Secretary-Treasurer	Wilbur S. Smith	(for a term of one year)
Director	T. T. Wiley	(for a term of two years)
Director	F. B. Crandall	(for a term of two years)

The By-Laws provide that, "Additional nominations for any office may be made by petition signed by not less than five voting members, of whom not less than three shall be Members. Each such petition shall be accompanied by the written consent of the nominee to run for the office for which he is nominated, and must be received by the Secretary not later than AUGUST 1ST."

Between August 1st and 15th a ballot on which will appear the names of all candidates for each office will be submitted to all members qualified to vote.

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